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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,992	03/23/2004	David S. Fredley	7463-39 (CE12409JME)	2320
30448	7590	06/24/2005	EXAMINER	
AKERMAN SENTERFITT P.O. BOX 3188 WEST PALM BEACH, FL 33402-3188			BLEVINS, JERRY M	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,992

Applicant(s)

FREDLEY ET AL.

Examiner

Jerry Martin Blevins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/23/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7, 10-14, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent to Herron et al, number 5,919,712.

Regarding claim 1, Herron teaches a light guide system (Figure 3C) comprising a light conduit for directing light (waveguide 302) and a reflective material coated to the light conduit (column 10, lines 17,18) without a boundary between the light conduit and the reflective material (the coating is applied directly to the edge 350 of the waveguide 302).

Regarding claim 11, Herron teaches a light guide system (Figure 3C) comprising a light conduit for directing light (waveguide 302) and a conformal coating of a reflective material on the light conduit (column 10, lines 17,18, and Figure 3C which shows the coating conformed to the edge 350 of the waveguide 302) without a boundary between the light conduit and the reflective material (the coating is applied directly to the edge 350 of the waveguide 302).

Regarding claims 2 and 12, Herron teaches the limitations of the base claims 1 and 11, respectively. Herron also teaches that the reflective material defines a border

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of volume (the waveguide) through which light can travel (column 10, lines 25,26) and that the index of the volume is substantially constant (column 9, lines 65-67 teach that the waveguide has a substantially constant index of refraction from about 1.46 to 1.52).

Regarding claims 3 and 13, Herron teaches the limitations of the base claims 2 and 12, respectively. Herron also teaches that the index of refraction of the volume is the index of refraction of the light conduit (since column 10, lines 25,26 teach that the volume through which the light can travel is the conduit).

Regarding claims 4 and 14, Herron teaches the limitations of the base claims 1 and 11, respectively. Herron also teaches a light source (Figure 1, element 100 which emits light 102 also shown in Figure 3C) optically coupled to the light conduit.

Regarding claim 6, Herron teaches the limitations of the base claim 1. Herron also teaches that the reflective material is a conformal coating (Figure 3C shows the coating conformed to the edge 350 of the waveguide 302).

Regarding claim 7, Herron teaches the limitations of the base claim 1. Herron also teaches that the reflective coating materials include aluminum or silver (column 10, lines 29,30).

Regarding claims 10 and 16, Herron teaches the limitations of the base claims 1 and 11, respectively. Herron also teaches that the light conduit includes a substantially planar surface at which the reflective material is coated (Figure 3C).

Regarding claim 17, Herron teaches a method of increasing the efficiency of a light guide system (Figure 3C) comprising the steps of providing a light conduit (waveguide 302) and coating the light conduit with a reflective material (column 10, lines

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17,18) without a boundary between the coating and the light conduit (the coating is applied directly to the edge 350 of the waveguide 302).

Regarding claim 18, Herron teaches the limitations of the base claim 17. Herron also teaches that the coating conforms to the shape of the light conduit (Figure 3C shows the coating conformed to the edge 350 of the waveguide 302).

Regarding claim 20, Herron teaches the limitations of the base claim 17. Herron also teaches that the coating step includes the step of applying reflective material among the group of aluminum or silver (column 10, lines 29,30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron in view of US Pre Grant Publication to Song, number 2004/0004767.

Regarding claims 5 and 15, Herron teaches the limitations of the base claims 1 and 11, respectively. Herron does not teach that the system further includes a display structure optically couple dot the light conduit. Song teaches a waveguide (Figure 4, element 420) coated with a highly reflective material (page 2, paragraph 17) optically coupled with a display structure (display panel, page 3, paragraph 49 and Figure 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to

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couple the waveguide of Herron to a display structure, as taught by Song. The motivation would have been to display optical information transmitted through the waveguide.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herron in view of US Pre Grant Publication to Hetzer, number 2001/0041041.

Herron teaches the limitations of the base claim 1. Herron does not teach that the light conduit is a transparent member. Hetzer teaches waveguide elements (Figure 3, elements 9 and 10) which are transparent members (page 2, paragraph 22 and page 3 paragraph 47). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the transparent waveguide of Hetzer as the waveguide of Herron. The motivation would have been to localize and concentrate the light through the waveguide (Hetzer, page 2, paragraph 22).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herron in view of US Pre Grant Publication to Doi, number 2002/0083585.

Herron teaches the limitations of the base claim 1. Herron does not teach that the light conduit is part of an electronic device. Doi teaches an optical waveguide (Figure 1, element 20) coupled to a wiring board (page 1, paragraph 6) so as to be incorporated into electronic components and finished products (page 1, paragraph 5). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the waveguide of Herron as part of an electronic device, as taught by Doi. The motivation would be to produce electronic devices without the undesirable effects of impedance and/or heat in the device (Doi, page 1, paragraph 4).

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Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herron in view of US Pre Grant Publication to Kragl, number 2004/0008952.

Herron teaches the limitations of the base claim 17. Herron does not teach that the coating step includes spraying reflective material. Kragl teaches a method of coating an optical waveguide with reflective silver coating using a spraying technique (page 8, paragraph 87). It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the step of coating of Herron the technique of spraying reflective material as taught by Kragl. The motivation would have been to perform the coating in a simple, economic, well-known method (Kragl, page 8, paragraph 87).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMB



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